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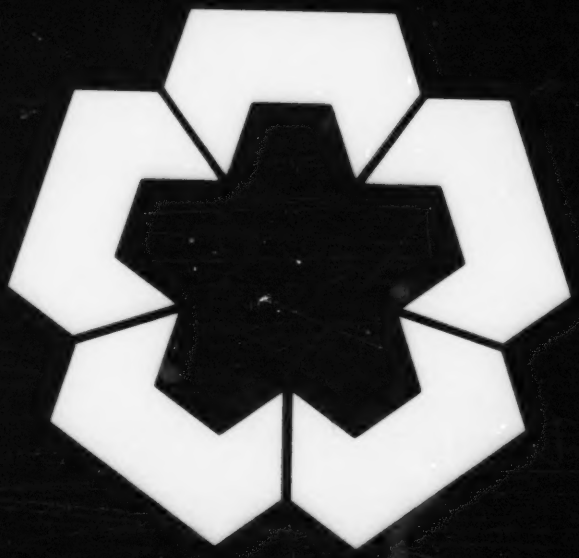

Environmental Issues In Alberta: The Opinions Of Edmonton Residents

RMD Report 82 17

Alberta

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ENVIRONMENTAL ISSUES IN ALBERTA:
THE OPINIONS OF EDMONTON RESIDENTS

RESEARCH MANAGEMENT DIVISION
Alberta Environment

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ENVIRONMENTAL ISSUES IN ALBERTA:
THE OPINIONS OF EDMONTON RESIDENTS

by

HARVEY KRAHN

Thames Group Research

for

Research Management Division

Alberta Environment

January 1983

RMD 82/17

This report is made available as a public service. The Department of Environment neither approves nor disagrees with the conclusions expressed herein, which are the responsibility of the authors.

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ABSTRACT

The Population Research Laboratory, Department of Sociology, University of Alberta, conducts annual surveys of randomly-selected samples of adult residents of Edmonton. Quality of life issues are central concerns in these studies. This report considers data from the 1980, 1981, and 1982 studies in which there were a number of questions dealing directly with environmental issues. Also included are comparative data from the city of Winnipeg. This report is a companion document to a much more detailed presentation of the results of these 1980-82 surveys, entitled "Attitudes towards the environment: Edmonton, 1980-1982; Winnipeg, 1981" (Krahn 1982).

Data from these several surveys showed that Edmonton residents view both chemical and waste control and air quality as the most serious environmental issues. There was a strong consensus that the government should be doing something about problems of air pollution, that strict enforcement of air quality standards was necessary, and that this enforcement should include prosecution of polluting industries. In addition, the 1980 survey results showed that the overuse of pesticides and herbicides was an issue that also concerned a large majority of Edmonton residents. Finally, the same survey also demonstrated that more than three-quarters of the adult respondents believed that it was possible to have both environmental preservation and economic growth in Alberta.

Younger, more educated respondents with higher-status occupations, and those who participate more in organizational and exercise/sports activities were more likely to favour strict methods of enforcing air quality standards. These groups were also more likely to be generally conscious of the environment, to have suggestions for environmental improvements, and to have done something about environmental problems.

ACKNOWLEDGEMENTS

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1. INTRODUCTION

The Population Research Laboratory, Department of Sociology, University of Alberta conducts an annual survey of adult Edmonton residents which, along with a variety of other subjects, focuses on quality of life concerns. Samples are randomly selected and generally represent the adult population of the city in all important demographic respects. In 1981, a parallel study, employing an identical questionnaire, was undertaken in Winnipeg. This allowed for comparison of results from the two cities. Questionnaires prepared in 1980, 1981, and 1982 all contained some questions about environmental issues. The responses of sample members to these questions are examined in this report.

There is some overlap in the questions included in the three consecutive surveys and, where useful, comparisons across years are presented. However, the 1982 survey contained the most extensive and well-constructed set of environmentally-related questions. Hence, the largest part of this report focuses on the most recent study. Data from the earlier studies (including the Winnipeg study) are introduced where they can help explain the 1982 pattern of results. Sample sizes for the four studies were: Edmonton, 1980 (n = 428); Edmonton, 1981 (n = 400); Winnipeg, 1981 (n = 328); and Edmonton, 1982 (n = 507).

Frequency distributions of responses to a variety of questions are presented along with several cross-tabulations of these responses. A much more extensive presentation of results is contained in a companion document entitled "Attitudes toward the environment: Edmonton, 1980-1982; Winnipeg, 1981" (Krahn 1982). This second, shorter report is designed to present the study results in a more concise, policy-relevant format.

2. SURVEY RESULTS

2.1 RESPONDENTS' ASSESSMENT OF ENVIRONMENTAL ISSUES FACING ALBERTA

Question: In your opinion, what are the three most important environmental issues facing Alberta today? (Rank Three)

This general question was asked of respondents in all four of the surveys, but in the first (1980) it was asked in an open-ended manner. The variety of unprompted responses were grouped into over a dozen general categories. These categories were then used to construct the fixed-choice question which appeared in subsequent surveys. In these studies, sample members were presented with a list of 13 possible answers and asked to rank three in order of importance to them. In effect, the 1980 sample pre-tested and helped improve the question.

The 13 possible answers are listed in Table 1. Because issues which received many first rank nominations tended to receive few second and third rank votes, and vice versa, it is difficult to assess the relative importance of these environmental issues to Edmonton and Winnipeg residents. Consequently, the responses were weighted with a score of three for a first-ranked problem, two for a second-ranked problem, and one for an environmental issue considered third most important. If 20 people considered Problem A to be the most serious, while 60 people considered Problem B third most important, the two environmental issues would be treated as relatively equal in importance to sample members. These 13 environmental issues, from the 1981 and 1982 Edmonton surveys and the 1981 Winnipeg study, were ranked according to the size of this score. The rankings, together with the percentage value of the scores, are presented in Table 1.

In 1981, Edmonton residents were most likely to consider conservation of resources to be an important environmental issue (Table 1), but control of chemicals and waste was ranked a close second. Changing the values and attitudes of the public, air quality,

Table 1. Environmental issues facing Alberta/Manitoba today ranked by importance assigned by sample members.

	Edmonton 1981		Edmonton 1982		Winnipeg 1981	
	Rank	%	Rank	%	Rank	%
Conservation of resources (e.g. energy)	1	17.2[a]	4	9.0	2	14.6
Control of chemicals or waste	2	16.4	3	14.9	1	15.0
Public values, attitudes, awareness	3	10.4	5	8.0	5	9.0
Air quality (smell, visible pollution, safety)	4	9.8	1	17.0	4	9.6
Water quality (taste, smell, safe supply	5	9.4	2	15.9	3	12.6
Control of growth (urban, industrial)	6	6.8	7	5.5	9	4.0
Improper land use	7	6.6	6	5.8	8	4.9
Too much government legislation	8	5.0	10	3.8	10	3.9
Wildlife protection	9	3.5	9	4.0	11	3.8
Failure of government legislation	10	3.1	11	3.7	7	5.3
Litter control and beautification	11	2.7	12	3.0	6	6.2
Noise	12	2.5	8	4.2	12	2.2
Restoring spoiled lands	13	1.2	13	1.4	13	1.0
Other/nothing/DK/NR[b]	-	5.4	-	3.8	-	7.9
Total		100.0		100.0		100.0

[a] Percentages are based on the sum of scores calculated as a score of three for most important, two for second most important, and one for third most important.

[b] The size of this "don't know"/non-response category is a product of the tendency for some respondents to be unable to choose a second or third most serious issue.

and water quality formed a second group of important environmental issues, more important than control of growth, improper land use, and too much government legislation, but somewhat less important than conservation and chemical/waste control. The remaining five environmental issues were not considered to be very serious by sample members.

Winnipeg residents in the same year (Table 1, column 3) were also most likely to consider conservation and control of chemicals and waste to be important environmental issues. However, while Edmonton sample members placed water quality in fifth place, Winnipegers ranked it higher (third) in importance. Litter control and failure of government legislation also received more attention from members of the Winnipeg sample, but control of growth and improper land use were considered less serious issues. Since Edmonton is growing much faster than is Winnipeg (in population and land area, particularly via annexation), the greater concern of Edmonton residents about uncontrolled growth and improper land use is understandable.

Several interesting rank order changes occur between 1981 and 1982 for the Edmonton samples. In the earlier study, conservation of resources (e.g., energy) was considered to be the most important environmental issue facing Alberta, whereas in 1982 it is ranked in fourth place (Table 1, column 2); replacing it in first place is the issue of air quality. It is possible that declining world oil prices have led to a shift in media attention from problems of energy conservation to problems faced by Alberta's oil-based economy. This may have resulted in a shift in public attitudes. Control of chemicals or waste receives a similarly high degree of concern from the two samples, demonstrating that this issue continues to worry Albertans. An important shift between the two studies appears in the relative importance to sample members of air and water quality. In 1981, they were ranked in fourth and fifth places; in 1982 air quality is considered to be the most serious environmental issue facing Alberta, followed closely by water quality.

2.2 ISSUES MOST AFFECTING RESPONDENTS

Question: Which issue on the card most affects you?[1]

Along with being asked to choose the three most important environmental issues facing the province, respondents were also asked to identify (from the same list) the one issue most affecting them personally.

In the 1981 Edmonton study, air quality, water quality, conservation of resources and public values/attitudes were identified with equal frequency. Each of these issues was chosen by between 12% and 16% of the total sample. In the 1982 Edmonton study, air quality was clearly considered to be the environmental issue most affecting respondents personally (21.1% of the total sample). The second-ranked issue was water quality (13.0%). Eleven percent of the sample identified public values/attitudes in response to this question, and the remainder was spread across the other ten response categories. In brief, air quality was most likely to be considered the most serious issue facing Alberta, and also the most often identified as personally affecting sample members.

Question: What is the main thing you have done personally about this issue?

Although this second open-ended question was not included in the 1982 study, a brief comment on the responses it generated in the 1981 studies is presented here. A wide variety of answers was received by interviewers. These have been collapsed into a limited number of broad categories for presentation in Table 2 which contains the results from both the Winnipeg and Edmonton surveys.

The most obvious feature of the results shown in Table 2 is the large proportion of the sample, in both cities, which reported doing nothing about the environmental issue most affecting them. However, the 52% of the Edmonton sample and the 44% of the Winnipeg sample in

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[1] Data not shown.

Table 2. Individuals' responses to the environmental issue most affecting them: Edmonton and Winnipeg, 1981.

Individuals' Responses	Edmonton Rank	Edmonton %	Winnipeg Rank	Winnipeg %
Read and talked about it	2	10.5	2	11.0
Contacted officials	4	3.5	5	3.9
Special interest groups (petitions, committees, etc.)	6	3.3	6	3.0
Voted	9	2.5	9	1.5
Smaller car	8	3.2	10	0.9
Cut energy consumption	3	5.0	3	7.7
Individual non-polluting[a] behaviour	6	3.3	8	2.4
Individual safety/anti-litter[b] behaviour	4	3.5	4	7.4
Other individual responses	10	2.3	6	3.0
Nothing/NR[c]	1	52.2	1	44.0
NA[d]	-	10.7	-	15.2
Total		100.0		100.0

[a] Used bio-degradable products, water purifiers, etc.
[b] Followed work safety procedures, avoided littering, etc.
[c] Almost all of the respondents in this category actually answered "nothing".
[d] Not Applicable - respondent was not asked the question since he or she did not answer the previous question leading into this one.

this group are not necessarily apathetic. While this explanation may be appropriate for some unknown fraction of this group, examination of the types of environmental issues identified suggests that doing something is often difficult. There is little that individuals can do personally about issues such as air and water quality, control of chemical waste and unrestricted urban and industrial growth. They can, of course, contact officials (4% did in both cities), but more often their responses involve personal energy conservation measures or simply informing themselves and others about the issue (Table 2). This is a comment on the need for regulation.

2.3 CONTROL AND REGULATION OF AIR POLLUTION

Question: If control of air pollution from oil sands and chemical processing, coal, and power plants becomes a problem in Alberta, who do you think should be most responsible for dealing with this problem?

This open-ended question appeared in the 1982 Edmonton Area Study, while the previous question (Section 2.1.3) concerning personal initiatives in dealing with environmental problems was part of the 1981 study. In combination, the responses from the two questions are quite informative.

Edmonton residents are not likely to have acted personally on environmental problems affecting them, but they appear to be in general agreement over who they think should be doing something. In response to a question about a specific problem (air pollution), almost 60% of the 1982 sample stated that government (at various levels) should be responsible (Table 3). Alternatively, about one-third of the sample suggested that industry should be responsible for dealing with an air pollution problem if it were to arise in Alberta.

Table 3. Who should be most responsible for dealing with air pollution?[a]

	n	%	
Alberta government	178	35.1	
Federal government	22	4.3	
Alberta and federal government	96	18.9	59.3%
Local municipalities (cities)	4	0.8	
Government, level unspecified	1	0.2	
Industry and government	8	1.6	
Industry itself	170	33.5	
Public, citizens	15	3.0	
Other/DK	13	2.6	
Total	507	100.0	

[a] Source: 1982 Edmonton Area Study.

It is possible that there is some ambiguity in the responses given by individuals to this question in the 1982 survey of Edmonton residents. Government responsibility for dealing with air pollution problems might entail either enforcement of safety legislation or actual capital expenditures to reduce air pollution. It is not immediately clear what the 60% of the sample had in mind when they said that government (provincial, federal or municipal) should be most responsible. Examination of the responses to the following question in the 1982 questionnaire helps us to interpret this finding.

Question: How should this air pollution problem be dealt with? That is, which way do you most prefer?

Unlike the previous question (Section 2.3) concerning responsibility for dealing with air pollution problems, this question was accompanied by a card with a list of predetermined responses. The distribution of responses chosen by Edmonton residents appears in Table 4.

Answers to the previous question suggested a strong consensus of opinion over government responsibility for dealing with air pollution problems. The data displayed in Table 4 demonstrate that sample members would prefer government to enforce safety standards. Over 70% of the sample favoured some form of enforcement, and only 11% said that industry should police itself.

A review of the findings to this point indicates that air pollution (air quality) is considered the most serious environmental problem facing the province and individuals in 1982. These respondents, while unlikely to be able to do much about the problem personally, tend to agree that it is government's responsibility to do something about such a problem. The preferred method of government intervention appears to be the enforcement of safety standards. In fact, the strength of support for such a policy is surprising.

Table 4. Preferred method of dealing with air pollution.

Method	n	%		
Citizen action (complaints, meetings, petitions, etc.)	31	6.1		
Industry policing (monitoring) itself	55	10.8		
Setting safety standards	37	7.3		
Enforcing safety standards	73	14.4		
Enforcing safety standards with fines	30	5.9		
Enforcing safety standards with heavy fines	154	30.4	57.8%	72.2%
Enforcing safety standards with imprisonment	36	7.1		
Closing down the plant	73	14.4		
Other/DK	18	3.6		
Total	507	100.0		

[a] Source: 1982 Edmonton Area Study.

A total of about 30% favoured enforcing safety standards with heavy fines. In addition, 7% of the sample would favour imprisonment as a method of dealing with those responsible for air pollution and 14% would recommend closing down the offending plant. These results clearly demonstrate public support for vigorous government efforts to enforce air quality legislation. It is important to note that this display of public consensus is not a product of how the fixed-choice question was phrased. A number of conservative responses (e.g., citizen action, industry policing itself, setting safety standards) were available to sample members who might have wished to avoid the more forceful response categories.

Question: Do you think that industries which exceed air pollution standards should be prosecuted?

The previous question in the 1982 Edmonton survey focused on preferred methods of dealing with problems of air pollution, whereas this very specific question placed the respondent into an either/or situation.

Given an industry which had exceeded specified air pollution standards, only 7% of the sample would oppose prosecution. About 5% of these sample members were uncertain, and a very large majority (88%) would favour prosecution of a polluting industry (Table 5). Again, the strength of the public consensus on this question is hard to ignore. If an industry has exceeded air pollution standards, sample members would want government to prosecute this industry.

The types of questions which might produce such strong agreement are often called "motherhood" questions. "Are you in favour of democracy?"; "Should the government be doing something about the crime problem?"; and "Should governments do something about air pollution?" are examples of questions to which very few individuals would respond negatively. However, the question on prosecution is not as general as these examples. It specifies a concrete action in response to a specific problem. Almost 9 out of 10 sample members favour prosecution of the offending industry.

Table 5. Level of support for the prosecution of polluting industries.[a]

Do you think that industries which exceed air pollution standards should be prosecuted?

	n	%
Yes	447	88.2
No	35	6.9
DK	25	4.9
Total	507	100.0

[a] Source: 1982 Edmonton Area Study.

2.4 PUBLIC SUPPORT FOR PROSECUTION

Question: Would you still favour prosecution if it resulted in any one of the following?

It is possible that prosecution of polluting industries would have some costly consequences for Albertans. Some of these possible consequences were suggested to sample members (Table 6). The question was asked of only those 447 individuals who had answered "yes" to the previous "yes - no" question (see Table 5).

Table 6 shows the percentage of the total sample which still favoured prosecution for each of these additional conditions. The original question was phrased with reference to oil and chemical processing, coal, and power plants. Even if the price of the products of these plants rose as a consequence of prosecution for air pollution, 70% of all respondents would still favour prosecution. If such an action required the conversion of home heating to another fuel, 68% of the sample would favour prosecution. The percentage in favour of prosecution drops to around 55% under these three conditions: loss of jobs, lower standard of living, and higher taxes. If any of these three situations occurred as a consequence of prosecution, slightly more than one half of these Edmonton residents would support that government policy. The most severe condition, according to the respondents, is that of personal job loss: 46% of the sample would still favour prosecution if it meant the loss of their own job.

The first impression left by the decreasing percentages in favour of prosecution is that public consensus on the issue is more apparent than real. Respondents appear willing to advocate prosecution until they personally feel the economic consequences of such an action. It is important to remember that these are hypothetical conditions. Prosecution of offending industries might result in higher costs for

Table 6. Support for prosecution of polluting industries under specific conditions.[a]

Would you still favour prosecution if it resulted in any one of the following?[b]	Number answering yes	Percentage[c] answering yes
Higher prices for these commodities?	356	70.2
Loss of jobs?	278	54.8
Lower standard of living?	290	57.2
Higher taxes?	281	55.4
Loss of your job?	232	45.8
Conversion of home heating to another fuel?	342	67.5

[a] Source: 1982 Edmonton Area Study.

[b] Question asked only of those respondents who answered "yes" to the preceding question (Table 5).

[c] Percentage of the total sample (n = 507) since it is assumed that those answering "no" to the previous question (as well as "don't know") would have responded similarly to this more specific question.

some commodities. While shutting down a plant would lead to some job loss, it is not a certainty that prosecution would result in plant closings. Furthermore, the probability of personal job loss from such an action, for any individual in Alberta, remains extremely low. In other words, the varying levels of support for a policy of prosecution tell us something about how individuals evaluate environmental issues: the more severe the personal consequences, the less likely an individual is to support a particular policy. However, they do not tell us what the consequences of prosecution of polluting industries would really be. If there were no identifiable costs to individuals, very strong support could be anticipated. If the consequences affected individual Albertans, some reduction in support could be expected, but the effects would have to be fairly widespread before large drops in support would begin to appear.

Question: Is it possible to have both preservation of the environment and substantial growth in Alberta's economy?[1]

Most respondents in this study were probably conscious of the hypothetical nature of some of the consequences discussed above. The distribution of responses from another question included in the 1980 Edmonton Area Study suggests that a large majority of Albertans would not expect serious economic consequences from stricter environmental controls.

While 12.6% of the 1980 Edmonton sample were undecided, and only 9.6% answered "no," a full 77.8% agreed that it was possible to have both environmental preservation and economic growth in the province. The same question was asked of 1100 Alberta residents in a 1975 survey (Decision Making Information Canada), and 77% agreed.

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[1] Data not shown.

There appears to have been little change in this sentiment in five years.

2.5 OVERUSE OF CHEMICALS

Question: Some people feel that we are using too many chemicals to control insects and plant diseases, and that this is causing serious environmental damage. How important is this issue to you?

The largest part of this discussion has focused on the issue of air pollution for two reasons: 1) respondents in the 1982 study identified it as the most serious environmental issue facing the province and, 2) specific questions in that study dealt with air pollution. However, this is clearly not the only such issue about which sample members had strong opinions as indicated by the results from this question about overuse of chemicals.

About one third of the 1980 survey respondents stated that the overuse of pesticides and herbicides was very important to them, and an additional 45% considered it a moderately important issue. Relatively few admitted that they were unconcerned (Table 7). The province-wide 1975 survey of 1100 Albertans noted earlier also included this question (Decision Making Information Canada 1975). In that study over one half (54%) of the sample said that the issue was most important, while 33% answered that it was moderately important. This greater concern about the misuse of chemicals may be a result of the inclusion of responses of rural residents in the earlier study. Nevertheless, the results from the two studies demonstrate fairly widespread concern about this environmental issue as well.

Table 7. Concern about overuse of chemicals.[a]

Some people feel that we are using too many chemicals to control insects and plant diseases, and that this is causing serious environmental damage. How important is this issue to you?

	n	%
Very important	148	34.6
Moderately important	192	44.9
Not very important	52	12.1
Not at all important	28	1.8
DK/NR	28	6.5
Total	428	100.0

[a] Source: 1980 Edmonton Area Study.

2.6 EVALUATION OF AIR QUALITY

One question used in the 1981 Edmonton and Winnipeg studies was part of a series tapping respondents' perceptions of their city. Respondents were presented with word pairs (e.g., crowded - uncrowded; safe - unsafe; attractive - unattractive) and asked to evaluate this dimension of their city on a scale of 1 to 7. For the phrases "clean air - dirty air" the average Edmonton score was 4.69 (higher scores representing cleaner air). Translated onto a scale of 0 to 100, the Edmonton average was 62. This only moderately positive assessment of air quality in Edmonton was considerably lower than the average Winnipeg score of 74. That residents of Winnipeg are more likely to consider their city to be a clean air city corresponds with the finding that 1982 Edmonton respondents placed air quality at the top of the list of serious environmental problems facing the province.

Evaluations of a city would, of course, be made relative to perceptions of other cities or towns. Consequently, it is interesting to examine responses to this last question given by individuals with different geographic origins. Considering only the 1981 Edmonton sample, we find that respondents who had always lived in Edmonton gave their city a moderate clean air rating (an average of 64 out of 100). Those who had moved to Edmonton from other parts of western or northern Canada were somewhat less positive in their assessment (an average score of 56). However, Edmonton residents who had moved from eastern and central Canada, or from ouside of Canada, were the most positive in their assessment of the city's air quality (an average of 71). This last group was probably comparing Edmonton to older and more industrialized cities, while migrants from Canada's west and north may have evaluated Edmonton more critically because of comparisons to less urbanized and industrialized regions.

3. WHO MOST FAVOURS STRICT METHODS OF AIR POLLUTION CONTROL?

Region of origin appears to be a factor which can help us to explain why some Edmonton residents are more critical than others of air quality in the city. However, several other demographic and socio-economic characteristics usually identify the "environmentally conscious" individual. Cross-tabulations of these factors with only one of the 1982 questions will be presented, but the various analyses reported in the longer data report mentioned in the introduction (Krahn 1982) demonstrate the consistency of these findings.

Respondents were asked about their preferred method of dealing with air pollution problems and were given a choice of eight possible responses (Table 4). Fines, heavy fines, imprisonment, and plant closings accounted for almost 60% of the responses, and can be considered to be "strict methods" of dealing with air pollution. All of the remaining responses (citizen action, industry policing, setting safety standards, enforcing standards, other and don't know) are combined into a second category called "other methods." Examination of the association between this new two-value variable and various explanatory variables helps us draw a profile of individuals most likely to be concerned about environmental issues (Table 8).

Younger and middle-aged repondents are most likely to favour strict methods of dealing with air-polluting industries. Between 59% and 66% of the sample members in the age categories below age fifty chose one of the strict method responses. Around 45% of those over fifty had similar opinions. Higher education is also associated with the tendency to recommend strict methods of dealing with an air pollution problem. Between 48% and 50% of those with 12 or fewer years of education favoured strict methods compared to 65% of those with more than 12 years of formal education. Individuals with higher-status occupations resemble those with higher educations in the type of response chosen. Those in the managerial/professional category were more likely (67%) to choose one of the stricter measures as their response than were individuals with clerical/sales/service or other occupations. In addition, Table 8 reveals that respondents with more memberships in organizations, and those who typically spend more

Table 8. Preferred method of dealing with air pollution by age, education, occupation, organizational participation, and exercise activity.

		Strict methods[a]	Other methods[b]	Total
Age	≤ 24	58.5%	41.5%	100.0%
	25 to 29	62.5%	37.5%	100.0%
	30 to 39	65.8%	34.2%	100.0%
	40 to 49	61.2%	38.8%	100.0%
	50 to 59	46.0%	54.0%	100.0%
	≥ 60	44.8%	55.2%	100.0%
Education (years completed)	≤ 8	47.7%	52.3%	100.0%
	9 to 11	49.4%	50.6%	100.0%
	12	50.0%	50.0%	100.0%
	13 to 15	65.2%	34.8%	100.0%
	≥ 16	65.2%	34.8%	100.0%

continued ...

Table 8. Concluded.

Occupation	Managerial/ professional	66.9%	33.1%	100.0%
	Clerical/sales/ services	51.0%	49.0%	100.0%
	Other[c]	57.7%	42.3%	100.0%
Number of organizational memberships[d]	None	54.8%	45.2%	100.0%
	One	49.6%	50.4%	100.0%
	Two	64.0%	36.0%	100.0%
	Three or more	68.4%	31.6%	100.0%
Hours per week in exercise/ sports	None	50.2%	49.8%	100.0%
	One to three	62.0%	38.0%	100.0%
	Four or more	65.8%	34.2%	100.0%
	TOTAL	57.8%	42.2%	100.0%

[a] [b] Includes fines, heavy fines, imprisonment and plant closing.
[c] Includes citizen action, industry policing, setting standards, enforcing standards, other, and DK.
[d] Construction, manufacturing, transportation, keeping house, etc.
Professional, recreational, church organizations, unions, etc.

time in exercise or sports activities are also more likely to reply that strict methods of air pollution control are necessary.

Examination of various other statistical associations (results not reported here) in the 1980, 1981, and 1982 data sets showed that younger individuals (who are probably more educated and typically have higher-status occupations) were more likely to be concerned about broad ecological issues. They were also more capable of identifying environmental problems facing the province and their city, of doing something about environmental problems, and of suggesting environmental improvements. Similarly, those with more organizational memberships, and who exercised more often tended to be more environmentally conscious. Higher education and participation in voluntary organizations may provide more opportunities to encounter pro-environment individuals and ideas. While the link between exercise activity and environmental consciousness may be a product of younger, more educated individuals being more physically active, it is also not unusual to find that a concern about physical fitness accompanies a concern about the quality of the physical environment.

4. SUMMARY OF FINDINGS

In 1981, residents of Edmonton and Winnipeg were most likely to identify conservation of resources and control of chemicals and waste as the most important environmental issues facing their province. While chemical and waste control continued to concern Edmonton residents in 1982, the more recent survey shows that air quality is the environmental issue most likely to concern sample members. Air quality was also the issue most affecting 1982 respondents personally. The 1981 survey results showed that Edmonton residents gave their city a lower clean air rating than did Winnipeg residents.

About one half of the 1981 respondents said that they had done nothing about the environmental problem most affecting them personally. Others had attempted to inform themselves about environmental issues or to conserve energy, but it was apparent that individuals felt that little could be done about some of the most serious environmental issues worrying them. However, the 1982 data demonstrate that a large majority of Edmonton residents believe that government should be responsible for dealing with problems of air pollution, particularly through strict enforcement of air quality standards. Edmonton residents (in the 1980 sample) also believed that both preservation of the environment and economic growth were possible.

About nine out of ten respondents agreed that industries which exceed air pollution standards should be prosecuted. Although the percentage in favour of prosecution drops considerably when certain consequences are added to the question (e.g., higher taxes, higher fuel costs, loss of jobs), the results still show strong support for a policy of prosecuting offending industries.

In brief, data from these several surveys showed that Edmonton residents view both chemical/waste control and air quality as serious environmental issues. There was a strong consensus that the government should be doing something about problems of air pollution, that strict enforcement of air quality standards was necessary, and that this enforcement should include prosecution of polluting industries. In addition, the 1980 survey results showed that the

overuse of pesticides and herbicides was an issue that concerned a large majority of Edmonton residents. Finally, the same survey also demonstrated that more than three-quarters of the adult respondents believed that it was possible to have both environmental preservation and economic growth in Alberta.

Younger, more educated respondents with higher-status occupations, and those who participate more in organizational and exercise/sports activities are more likely to favour strict methods of enforcing air quality standards. These groups are also more likely to be generally environmentally conscious, to have suggestions for environmental improvements, and to have done something about environmental problems.

5. REFERENCES CITED

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